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JOURNAL OF BIOENERGETICS AND BIOMEMBRANES

Volume 30, Number 1 **February 1998**

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Minireview Series: Cytochrome Oxidase: Structure and Mechanism

Series Editor: Mårten Wikström

Front outside cover: **Proton transfer paths in cytochrome *c* oxidase.** (Fig. on left) Putative D- and K-pathways of proton transfer are indicated in red. The illustration was made using the Visual Molecular Dynamics Software (Univ. of Illinois; see Brzezinski and Ädelroth, p. 99) on the basis of the atomic coordinates from Tsukihara *et al.* (Science (1996) 272, 1136–1144). Amino acid numbering refers to the enzyme from *Rhodobacter sphaeroides*. **Electron transfer paths in cytochrome *c* oxidase.** (Fig. on right) The figure shows the best path coupling Cu_A to heme *a* on the left (red); the best path connecting heme *a* (left) to heme a_3 (right) is also shown in red below. A direct path coupling Cu_A to heme a_3 on the right (blue) is less favorable due to the Mg ion (grey). The illustration (see Regan *et al.*, p. 35) is based on the atomic coordinates from Tsukihara *et al.* (Science (1996) 272, 1136–1144).

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Volume 30, Number 2 **April 1998**

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Minireview Series: Na^+—Coupled Cotransporters

Series Editor: Nancy Carrasco

Front outside cover: Top, Proposed secondary structure model of the thyroid Na^+/I^- symporter (NIS). Initial coordinates were obtained with the program QUANTA (Molecular Simulations Inc., Burlington, Mass.). Regularization of the model was carried out with the program "O" (Dai *et al.*, 1996). Graphics were carried out with the program SETOR (Dai *et al.*, 1996). Membrane-spanning helices are depicted in red. The color code for amino acids is: Trp, green; Leu, Ile, Phe, and Tyr, yellow; Asp and Glu, red; Arg, Lys and His, blue; remaining amino acids, grey. In Asp 16 and Glu 79 carbon atoms are depicted white and oxygen atoms purple. In Arg 208 carbon atoms are white and nitrogen atoms blue. *Bottom,* for details refer to legend in Figure 1B, (see Levy *et al.*, p. 195).

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Volume 30, Number 3 **June 1998**

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Front outside cover: **Mitochondrial Ca^{2+} transients in cardiac myocytes.** Myocytes were loaded with red-fluorescing TMRM, a mitochondrial marker (left panels), and Fluo 3, a Ca^{2+} indicator (right panels). Shown are 1.5 sec confocal image scans progressing in time from top to bottom. In **A**, Fluo 3 was loaded into the cytosol but not the mitochondria, and Fluo 3 fluorescence did not increase in mitochondria (small arrows) after electrical stimulation (large arrow). In **B**, Fluo 3 was loaded into both mitochondria and cytosol. After electrical stimulation (large arrows), Fluo 3 fluorescence increased in both the cytosol and the mitochondria. Double arrows in **A** show Fluo 3 uptake into non-mitochondrial organelles. (See Ohata *et al.*, p. 207).

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Volume 30, Number 4 **August 1998**

Minireview Series: Voltage-Dependent Calcium Channels: Structural Insights into Channel Function, Pharmacology, and Assembly in Health and Disease

Series Editor: Maureen W. McEnery

Front outside cover: The cover figure illustrates P/Q-type calcium channels in the dendritic field of cerebella granule cells. Different colors represent channel density. The high intensity spots are nerve terminals. (From the article entitled 'Physical Link and Functional Coupling of Presynaptic Calcium Channels and the Synaptic Vesicle Docking/Fusion Machinery,' Sheng *et al.*, p. 335).

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Volume 30, Number 5 **October 1998**

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Front outside cover: Surface rendered depictions of 3-D reconstruction of mitochondria after the volumes were segmented by manually contouring the regions bounded by the outer, inner, and cristal membranes. Inner boundary and cristal membranes are continuous surfaces but were segmented to highlight separate topographies. Distinct cristae were segmented independently to examine membrane morphology and connectivity and are displayed using different colors. (From the article entitled 'Electron Tomography of Mitochondria from Brown Adipocytes Reveals Crista Junctions,' Perkins *et al*, p. 431).

JOURNAL OF BIOENERGETICS AND BIOMEMBRANES

Volume 30, Number 6 **December 1998**

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Front outside cover: The cover figure is a snapshot model for a lipid-mediated State 4 proton-selective leak in high-cardiolipin mitochondria from thyroid-responsive tissues. Proton (blue) and electron (brick red) circuits are as in Nicholls and Ferguson (1992). Inner membrane outer-surface di-anionic cardiolipin (CLo) headgroup-network microdomains are competitive proton-concentrating antennas, yet can donate protons to CLo transient chains of (20) H-bonded water molecules in single file between the normally few CL extended fatty acyl chains (and, not shown, to protonophores and proton-transporting proteins)-a $\Delta\psi$-driven proton pathway to the matrix. Proton flux depends on regulable CL amounts, sidedness, and saturation. (From the article entitled 'Cardiolipins and Mitochondrial Proton-Selective Leakage,' Hoch, p. 511)